Submission by the Australian Nursing and Midwifery Federation

# Jobs and Skills Australia – AI Capacity Study

May 2025

Australian Nursing & Midwifery Federation

**Annie Butler**
**Federal Secretary**

**Australian Nursing and Midwifery Federation**
**Level 1, 365 Queen Street, Melbourne VIC 3000**
**E: anmffederal@anmf.org.au**
**W: www.anmf.org.au**

## Introduction

1. The Australian Nursing and Midwifery Federation (ANMF) is Australia's largest national union and professional nursing and midwifery organisation. In collaboration with the ANMF's eight state and territory branches, we represent the professional, industrial and political interests of more than 345,000 nurses, midwives and care-workers across the country.

2. Our members work in the public and private health, aged care and disability sectors across a wide variety of urban, rural and remote locations. We work with them to improve their ability to deliver safe and best practice care in each and every one of these settings, fulfil their professional goals and achieve a healthy work/life balance.

3. Our strong and growing membership and integrated role as both a trade union and professional organisation provides us with a complete understanding of all aspects of the nursing and midwifery professions and see us uniquely placed to defend and advance our professions.

4. Through our work with members, we aim to strengthen the contribution of nursing and midwifery to improving Australia's health and aged care systems, and the health of our national and global communities.

5. The ANMF thanks Jobs and Skills Australia for the opportunity to provide feedback on Gen AI in the Australian workplace and labour market.

## Overview

6. Generative artificial intelligence (Gen AI) is already widespread across industry, government, and science. There is great potential for benefit with the judicious expanded development and adoption of AI technologies, however this is not without the potential for risk and harm. Gen AI has significant potential to revolutionise and benefit the way many industries operate, including healthcare in ways that can both enhance the outcomes and experiences of patients and clients as well as the jobs and roles of workers. This wider adoption, as with all new technologies and innovations, however, is extremely complex. These complexities, if not properly planned for and addressed, have the potential to cause substantial harm for patients/clients and workers.

7. The adoption of AI technologies must be accompanied by appropriate guardrails to ensure systems are designed and maintained to rigorous national and international standards. Such measures should be developed in consultation with workers, consumers, industry, peak bodies, and other key stakeholders.

8. This submission will focus on the implications of Gen AI as it pertains to the nursing, midwifery, and wider healthcare workforce.

## How is Gen AI being adopted and used in Australia?

*What is driving the pace and depth of Gen AI adoption and use and what are the main barriers? What would improve the quality and pace of adoption across the labour market? How might Gen AI interact with other emerging technologies, like Agentic AI, or other labour market trends?*

9. The adoption and uptake of new technology innovations including Gen AI can largely be explained by pre-existing differences in available human capital, with employers and industries that focus on developing knowledge and skills being most prepared for adoption.[1] Despite the rapid pace of AI adoption, key barriers can include the technological obsolescence, resistance to change and innovation, and concerns (including very legitimate and reasonable concerns) about the risks of technology. Careful, planned, and controlled adoption of AI is needed and therefore a sole focus on improving the pace of adoption must

be tempered by considerations around safety, risk, and quality to ensure that sectors and those that work there are not detrimentally impacted.

10. The potential applications of Gen AI in healthcare are extensive, with implications across clinical practice, administrative, research, and education. Applications of Gen AI in healthcare are evident across Australia. This includes the use of Gen AI to streamline repetitive and time-consuming administrative tasks which enables clinicians to spend more time on direct patient care. Gen AI can also be used to enhance diagnostics, support remote health monitoring, drive health chatbots, accelerate drug discovery and development, facilitate risk stratification and triaging, and to design and support professional education and training.[2,3]

11. In the healthcare context, two main Gen AI models have been adopted; generative adversarial networks (GANs) and large language models (LLMs).[4] GAN models are being utilised for the creation of realistic datasets for research and training, by synthesising electronic health record (EHR) data and replicating underlying data distributions.[5] This allows for the training of healthcare professionals, or machine learning models, in areas where real-world patient data is limited or restricted due to privacy or ethical considerations.[6] Large Language Models (LLMs) are increasingly being applied in healthcare to generate and test novel small molecules, nucleic acid sequences, and proteins with specific structures or functions to aid in drug development.[7,8] Both GANs and LLMs are also being explored for improving diagnostic accuracy by enabling the rapid analysis of large, diverse datasets to detect patterns, anomalies, and early disease indicators.[9] LLMs are also often discussed in terms of reducing documentation burden by collating and summarising patient data into usable formats, such as clinical notes, discharge summaries, and handover documents. Further, these models have intersections with other facets of AI, such as with Agentic AI to streamline repetitive administrative tasks and provide healthcare workers with more time to spend with patients.[4]

12. The growing adoption of Gen AI in healthcare is largely driven by supply-and-demand

challenges, including workforce shortages, ageing populations, growing burden of chronic diseases, and rising costs of healthcare. The use of Gen AI in this context is often viewed as a method to reduce burden on healthcare professionals by automating certain high-volume, low-complexity tasks and enable professionals to spend more time delivering direct care, therefore improving health outcomes.[10,11] However, several barriers are present that hinder the wider adoption of these technologies.

13. One significant barrier is concern around patient privacy and informed consent. As Gen AI models often require large datasets for training, which may include sensitive or personal information, there are justified concerns regarding the management of this data and individual privacy. The sharing of large health data repositories to inform systems is often done without the permission or knowledge of patients, and with advanced AI tools that are capable of identifying individuals even in de-identified datasets,[12] concerns and hesitancy to provide information are warranted. Further, concerns are often expressed regarding data leaks and data mining. Here, the need for strict developmental guidelines and cyber security systems are highlighted, as well as practitioner and consumer training on the appropriate level of personal data to provide to an AI system.

14. Further ethical concerns regarding these models have also been highlighted, particularly accountability and transparency in the use of Gen AI for clinical decision making where there is potential of patient harm. While this is currently regulated by the Therapeutic Goods Administration,[13] there is a need to ensure that AI systems used for medical purposes are regulated to a high standard and that the process in which predictions are derived is transparent, explainable, and always overseen by human experts. International guidelines on the ethical use and development of AI systems for health have been developed by peak bodies such as the World Health Organization,[14] and a National Policy Roadmap has been published by the Australian Government,[15] however, there is a need for standardisation in the governance of healthcare-based AI systems to ensure their capability to translate to safe and effective clinical services.

15. The environmental impacts of Gen AI and associated technologies must also be considered. Generative AI and digital data centres more broadly are known to have considerable environmental impacts including water usage and carbon emissions.[16] This footprint would typically be classified under 'Scope 3 emissions', as it arises from indirect activities outside an organisation's direct operational control. While the health sector across most jurisdictions is currently not mandated to report or reduce emissions,[17] all Australian states and territories aim to be net zero by 2050.[18] the significant environmental footprint of Gen AI is a consideration that should be factored into healthcare's emissions reduction strategies and respective policy. For example, there are several international examples of policies implemented to regulate AI and its environmental footprint, such as the Artificial Intelligence Act 2023, passed in the European Union. This act calls for greater transparency in emissions accounting and reporting for AI systems. Despite this, there is no explicit call for AI providers to reduce their emissions and subsequently there might be little incentive for providers to reduce emissions. Introducing greater regulatory measures and/or agreements in place with major AI providers around their ethical energy and water use for emissions reduction, with strong procurement policies in place in Australia, should be pursued.

16. The use of Gen AI to develop synthetic datasets to train professionals or machine learning programs has the potential to perpetuate data biases presented in historical datasets. For example among women with breast cancer, black women had a lower likelihood of being tested for high-risk mutations compared with white women, leading to an AI algorithm that depends on genetic test results being more likely to mischaracterise the risk of breast cancer for black patients than white patients.[19] Discrimination in medical research also includes dangerous prejudices against gender and sexually diverse people which must be unpacked and disentangled from data sets before they are implemented into AI systems or training.[20]

17. Improving the quality and pace of Gen AI adoption in the health sector requires careful consideration and mitigation of associated risks. The wider adoption of Gen AI must be accompanied by thorough risk minimisation and proactive safety measures that ensure

systems are designed and maintained to rigorous national and international standards. Such safeguards should be developed in consultation with consumers, industry, peak bodies, and other key stakeholders.

## What effect is Gen AI having on work, workers and workplaces?

*What evidence is there of emerging effects on innovation, productivity, demand for skills and expertise? What effects are emerging on employment, remuneration, security of work or contractual arrangements?*

18. The Leveraging Digital Technology in Healthcare report, published by the Australian Government Productivity Commission, suggests up to 30% of the tasks undertaken by the health workforce could be automated using digital technology and AI, freeing up around 11 hours each week for every healthcare worker.[21] This would provide them with more time to focus on patient care. The use of Gen AI in this manner, to automate certain administrative and repetitive clinical tasks, provides opportunity to increase workforce productivity and bridge some of the gap between supply and demand. However, the ANMF emphasises that Gen AI, in no circumstance, should be considered a replacement for human healthcare workers, nor should it be used in isolation. Rather, AI systems are to serve as a tool for workers in delivering safe, dignified, and equitable health care. This also must extend to the use of AI for monitoring workers including keystroke, location, and attention monitoring and the use of AI to inform or make human resource-related decisions including performance management, recruitment, and employment of staff.

19. Gen AI must not be viewed as a solution to workforce shortages or used as a stopgap to bridge existing staffing shortages. The use of AI to create workforce redundancies and replace workers has the potential to cause great harm, particularly in relation to lost employment and income. While these technologies can be used to support workflows, they cannot and should not replace the human workforce required in many sectors, particularly healthcare. The use of Gen AI in healthcare requires human oversight to ensure accuracy and the presentation of information that accounts for human element of healthcare (such as responsiveness, assurance, courtesy, empathy, communication, and understanding).[22]

The wider adoption of AI in healthcare, therefore must be accompanied by training of new, and upskilling of current, healthcare professionals to effectively and ethically work with these technologies to ensure that the research to policy and practice gap is minimised.[23] This will necessitate strategic planning in how AI systems are implemented throughout the workforce and investments to support those affected. Here, specialised training will be necessary and capable educators and researchers along with fit-for-purpose regulations will be needed.

20. While the use of new systems in a workplace setting will necessitate the modification of new and existing roles, access to Gen AI should not be used to reclassify workers into different roles that diminish their professional standing, responsibilities, conditions, or compensation. The use of AI tools in the workforce should remain at the discretion of the practitioner and they must be enabled to understand the implications of such decisions.

21. An additional consideration is the potential impact of AI chatbot 'nurses' on public trust in the professions. Nurses and midwives are consistently recognised as among the most trusted professions. The introduction of AI-driven representations of healthcare professionals risks undermining not only trust in healthcare services but the reputation of the nursing and midwifery professions. It is recommended that strategies be developed to protect the public reputation of nurses and midwives in the context of emerging AI technologies. Such strategies might include prohibiting the use of protected terms, such as 'Nurse' and 'Midwife' alongside 'ChatBot' or 'AI' (for example 'AI Nurse Bot').

## How might the effect of Gen AI in the workplace differ for different workers (by individual or group characteristics)?

*Do some workplaces, industries and occupations need more intersectional expertise for successful transition? Where can Gen AI best support greater participation?*

22. Due to the diversity of contexts where nurses, midwives, and personal care workers practice and study, there will be different impacts of the penetration and adoption of Gen AI – both potentially beneficial and risky. All workplaces, industries, and occupations would

benefit from learning from intersectional learning opportunities to share experiences and knowledge to guide the safe and ethical adoption of Gen AI. In terms of workforce participation, careful adoption of Gen AI has the potential for enabling improved productivity and engagement at work particularly for workers with lower ability levels. For more highly skilled workers, Gen AI has the potential for boosting work performance by allowing workers to focus on higher-level tasks.

## What does best-practice transition and adoption look like?

*Given the pace and depth of adoption, how should employers, employees and the skills system manage the transition? How can the implementation of Gen AI be better managed by employers, employees, governments and others? What form of consultation or engagement should take place between employers and workers about implementing Gen AI?*

23. The adoption of Gen AI into the workforce comes with inherent risk and complexity. Best-practice transition and adoption of Gen AI must be guided by a comprehensive, transparent, and inclusive governance framework. At each stage it is important that government remains in contact with key stakeholders to ensure safe, controlled, and effective adoption and integration of Gen AI.

24. With focus on the healthcare sector, there is need to establish national standards that are underpinned by consultation with consumer groups, industry, workforce, and peak bodies. While international guidelines on the ethical use and development of AI systems for health have been developed by peak bodies such as the World Health Organization,[14] and a National Policy Roadmap has been published by the Australian Government,[15] there is a need for standardisation in the governance of healthcare-based AI systems to ensure their capability to translate to safe and effective clinical services.

25. It will also be important to ensure that Australian health stakeholders are included and involved in the development of AI technologies. This will assist in ensuring that AI technologies are translatable to the Australian healthcare environment and are sensitive to local use cases and broader system-wide applications while also maintaining a local knowledgebase and pool of expertise. The adoption of Gen AI must follow procedures to

ensure its feasibility prior to its implementation and exposure to patients. This should include rigorous piloting studies prior to its deployment.

## How will education and training systems need to adapt?

*How can industry work with the education and training system to develop capabilities for the transition to a Gen AI-enabled economy?*

26. With the greater adoption of Gen AI in healthcare, all clinicians will encounter AI systems at work. Because of this, healthcare workers must be adequality trained and prepared to interact with Gen AI in an effective, appropriate and ethical manner. Education and training programs for clinicians must carefully integrate foundational knowledge of Gen AI principles, risks, limitations, and ethical implications. This will necessitate close collaboration between the research, education, and workforce sectors as well as government and ongoing oversight and monitoring.

## How will implications of Gen AI differ across higher education, vocational education and training and other forms of adult skill formation?

*Will the implications differ between accredited and non-accredited training, or full qualifications and micro-credentials?*

27. The potential for benefit as well as harm in the development and adoption of Gen AI technologies in the education sector as it relates to the training of nurses and midwives is a key concern of the ANMF. The use of AI in education and training will directly influence the preparation of the current and future nursing and midwifery workforce, thus it influences professional practice and workforce safety as well as the safety, health, and wellbeing of the wider public.

28. The emergence and penetration of Gen AI into the education sector presents a transformative opportunity, albeit one accompanied by manifold complexities.[24] Careful consideration must be given to how Gen AI influences education experiences, outcomes, and workforce preparedness.

29. Gen AI can be a useful and promising tool for personalised learning where educators could improve and enrich teaching and learning through ethical, careful, and high-quality integration of technology into lesson planning and the development of engaging learning activities. However, it can also be misused, particularly in relation to its use by students for course completion. Gen AI may be overly relied on by students or misused for dishonest writing in assignments or cheating on tests, leading to potential knock-on effects regarding learning experiences, outcomes, and work readiness of future clinicians. This, in turn, has implications for the safety, effectiveness, and appropriateness of care.

30. National and institutional initiatives, informed by frameworks like UNESCO's AI Competency Frameworks, highlight the importance of comprehending both the potential and limitations of AI in edcation.[24] As stakeholders around the world navigate the transformative shift of the emergence of AI in education and beyond, fostering a culture of responsible AI use becomes paramount. This will help to ensure that educators and students can effectively navigate the evolving educational landscape, while simultaneously cultivating critical thinking, adaptability, and ethical awareness which will continue to be vital for the future healthcare workforce.

31. To be prepared for a future where AI continues to become even more embedded and unavoidable in education, educators must be supported to develop strong and critical understandings regarding the potential risks and benefits of the technology. Likewise, students must be prepared with sufficient digital literacy skills to ensure safe, ethical, effective interaction and use of generative AI.

32. Policy makers, education institutions, governments, and other stakeholders such as the Australian Nursing and Midwifery Accreditation Council (ANMAC) must be proactive and resourceful to ensure that policy and practice regarding AI is effectively integrated into existing education policies and that such policies are also developed with consideration of regional and cross-border dialogue and information sharing. Key policy considerations must focus on the development of national strategies, enhancing educational systems capacity

and preparedness, professional development for educators and digital literacy training for students, fit for purpose copyright laws, and consideration of curriculum, assessment, and data protection. Ongoing research and inquiry into the penetration and impact of AI in education and training of clinicians must also occur to ensure decision and policy making continues to be fit for purpose and based on the best available evidence and analysis.

## What role can policy play?

*What actions can governments take now and in the future? What roles and responsibilities could be held by other parties (such as employers, workers, developers of software and other technology, education providers, or other institutions)?*

33. As highlighted throughout this submission, government action is required to regulate and oversee the use of Gen AI by employers, software developers, and education providers as well as other stakeholders. Key actions include the creation of national standards that regulate the design, deployment, and monitoring of Gen AI technologies. Further, regulatory frameworks that mandate transparency, accountability, and explainability in Gen AI systems, particularly in the healthcare sector, need to be established. Policies must also address data privacy, consent, and cybersecurity concerns, particularly in relation to the storage and use of sensitive health information.

34. Further, guardrails should be put in place to ensure protection of the workforce from the use of Gen AI to create redundancies or reclassifications. Protection of professional titles should also be expanded to cover AI systems, where protected titles such as ‘nurse’ and ‘midwife’ may be used to misrepresent the capability of Gen AI models.

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